Devi, S.
10/030529

(FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO, TOXCENTER, PHIC, PHIN, DISSABS, PASCAL, FEDRIP' ENTERED AT 09:01:47 ON 13 MAY 2004)

L24 24 S "ELKINS C"?/AU AND (DSRA OR DUCREYI(5A)RESISTANCE) -Author

L25 8 DUP REM L24 (16 DUPLICATES REMOVED)

L25 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2002:815731 HCAPLUS
DOCUMENT NUMBER: 138:70927
TITLE: The Haemophilus **ducreyi** serum **resistance** antigen **DsrA** confers attachment to human keratinocytes
AUTHOR(S): Cole, Leah E.; Kawula, Thomas H.; Toffer, Kristen L.; **Elkins, Christopher**
CORPORATE SOURCE: Department of Microbiology & Immunology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599, USA
SOURCE: Infection and Immunity (2002), 70(11), 6158-6165
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Haemophilus ducreyi is the etiol. agent of the sexually transmitted genital ulcer disease chancroid. H. **ducreyi** serum **resistance** protein A (**DsrA**) is a member of a family of multifunctional outer membrane proteins that are involved in resistance to killing by human serum complement. The members of this family include YadA of Yersinia species, the UspA proteins of Moraxella catarrhalis, and the Eib proteins of Escherichia coli. The role of YadA, UspA1, and UspA2H as eukaryotic cell adhesins and the function of UspA2 as a vitronectin binder led to our investigation of the cell adhesion and vitronectin binding properties of **DsrA**. We found that **DsrA** was a keratinocyte-specific adhesin as it was necessary and sufficient for attachment to HaCaT cells, a keratinocyte cell line, but was not required for attachment to HS27 cells, a fibroblast cell line. We also found that **DsrA** was specifically responsible for the ability of H. ducreyi to bind vitronectin. We then theorized that **DsrA** might use vitronectin as a bridge to bind to human cells, but this hypothesis proved to be untrue as eliminating HaCaT cell binding of vitronectin with a monoclonal antibody specific to integrin αvβ5 did not affect the attachment of H. ducreyi to HaCaT cells. Finally, we wanted to examine the importance of keratinocyte adhesion in chancroid pathogenesis so we tested the wild-type and **dsrA** mutant strains of H. ducreyi in our swine models of chancroid pathogenesis. The **dsrA** mutant was less virulent than the wild type in both the normal and immune cell-depleted swine models of chancroid infection.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2002:609287 BIOSIS
DOCUMENT NUMBER: PREV200200609287

TITLE: The mechanism of complement resistance mediated by the outer membrane protein **DsrA**.
AUTHOR(S): Abdullah, M. T. [Reprint author]; Olsen, B. [Reprint author]; **Elkins, C.** [Reprint author]
CORPORATE SOURCE: Department of Medicine, University of North Carolina, Chapel Hill, NC, 27599, USA
SOURCE: International Immunopharmacology, (August, 2002) Vol. 2, No. 9, pp. 1345-1346. print.
Meeting Info.: XIX International Complement Workshop. Palermo, Italy. September 22-26, 2002.
ISSN: 1567-5769.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Nov 2002
Last Updated on STN: 27 Nov 2002

L25 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2001:50664 HCAPLUS
DOCUMENT NUMBER: 134:126820
TITLE: Sequences of Haemophilus ducreyi **DsrA** protein and therapeutic uses thereof
INVENTOR(S): **Elkins, Christopher**
PATENT ASSIGNEE(S): The University of North Carolina at Chapel Hill, USA
SOURCE: PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001004138	A1	20010118	WO 2000-US18834	20000707

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-143257P P 19990709
AB The invention provides protein and DNA sequences of Haemophilus ducreyi **DsrA** protein that is an outer membrane protein of Haemophilus **ducreyi** that confers serum **resistance** to the bacteria. Expression vectors and host cells expressing **DsrA** are also described. Also described is a mutant H. ducreyi strain that does not express **DsrA**. Vaccines against H. ducreyi and methods of using the same are also described.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2001:215861 HCAPLUS
DOCUMENT NUMBER: 134:308905
TITLE: **DsrA**-deficient mutant of Haemophilus ducreyi is impaired in its ability to infect human volunteers
AUTHOR(S): Bong, Cliffton T. H.; Throm, Robert E.; Fortney, Kate R.; Katz, Barry P.; Hood, Antoinette F.; **Elkins, Christopher**; Spinola, Stanley M.
CORPORATE SOURCE: Department of Medicine, School of Medicine, Indiana University, Indianapolis, IN, 46202, USA
SOURCE: Infection and Immunity (2001), 69(3), 1488-1491
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Haemophilus ducreyi produces an outer membrane protein called **DsrA**, which is required for serum resistance. An isogenic **dsrA** mutant, FX517, was constructed previously in H. ducreyi 35000. Compared to its parent, FX517 cannot survive in normal human serum. When complemented in trans with a plasmid containing **dsrA**, FX517 is converted to a serum-resistant phenotype. To test whether **dsrA** was transcribed in vivo, we successfully amplified transcripts in five biopsies obtained from four exptl. infected human subjects. To test whether **DsrA** was required for virulence, six volunteers were exptl. infected with 35000 and FX517 and observed for papule and pustule formation. Each subject was inoculated with two doses (70 to 80 CFU) of live 35000 and 1 dose of heat-killed bacteria on one arm and with three doses (ranging from 35 to 800 CFU) of live FX517 on the other arm. Papules developed at similar rates at sites inoculated with the mutant or parent. However, mutant papule surface areas were significantly smaller than parent papules. The pustule formation rate was 58% (95% confidence interval [CI] of 28 to 85%) at 12 parent sites, and 0% (95% CI of 0 to 15%) at 18 mutant sites (P = 0.0004). Although biosafety regulations precluded our testing the complemented mutant in humans, these results suggest that expression of **DsrA** facilitates the ability of H. ducreyi to progress to the pustular stage of disease.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:222582 BIOSIS
DOCUMENT NUMBER: PREV200200222582
TITLE: **DSRA** is involved in the attachment of Haemophilus ducreyi to human keratinocytes.
AUTHOR(S): Cole, L. [Reprint author]; **Elkins, C.** [Reprint author]; Kawula, T. [Reprint author]
CORPORATE SOURCE: Department of Microbiology and Immunology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA
SOURCE: International Journal of STD and AIDS, (2001) Vol.

12, No. Supplement 2, pp. 145. print.
Meeting Info.: International Congress of Sexually Transmitted Infections. Berlin, Germany. June 24-27, 2001. International Union Against Sexually Transmitted Infections; ISSTDR.
ISSN: 0956-4624.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Apr 2002
Last Updated on STN: 3 Apr 2002

L25 ANSWER 6 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:222585 BIOSIS
DOCUMENT NUMBER: PREV200200222585
TITLE: The mechanism of complement resistance mediated by the outer membrane protein **DSRA**.
AUTHOR(S): Abdullah, M. T. [Reprint author]; Olsen, B. [Reprint author]; **Elkins, C.** [Reprint author]
CORPORATE SOURCE: Department of Medicine, University of North Carolina, Chapel Hill, NC, 27599, USA
SOURCE: International Journal of STD and AIDS, (2001) Vol. 12, No. Supplement 2, pp. 145. print.
Meeting Info.: International Congress of Sexually Transmitted Infections. Berlin, Germany. June 24-27, 2001. International Union Against Sexually Transmitted Infections; ISSTDR.
ISSN: 0956-4624.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Apr 2002
Last Updated on STN: 3 Apr 2002

L25 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2000:146836 HCAPLUS
DOCUMENT NUMBER: 132:318496
TITLE: Serum **resistance** in Haemophilus **ducreyi** requires outer membrane protein **DsrA**
AUTHOR(S): **Elkins, Christopher**; Morrow, K. John, Jr.; Olsen, Bonnie
CORPORATE SOURCE: Departments of Medicine and Microbiology and Immunology, School of Medicine, University of North Carolina, Chapel Hill, NC, 27599, USA
SOURCE: Infection and Immunity (2000), 68(3), 1608-1619
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Haemophilus ducreyi is resistant to killing by normal serum antibody and complement. We discovered an H. ducreyi outer membrane protein required for expression of serum **resistance** and termed it **DsrA** (for "**ducreyi** serum **resistance** A"). The **dsrA** locus was cloned, sequenced, and mutagenized. An

isogenic mutant (FX517) of parent strain 35000 was constructed and characterized, and it was found to no longer express **dsrA**. FX517 was at least 10-fold more serum susceptible than 35000. **DsrA** was expressed by all strains of H. ducreyi tested, except three naturally occurring, avirulent, serum-sensitive strains. FX517 and the three naturally occurring **dsrA** -nonexpressing strains were complemented in trans with a plasmid expressing **dsrA**. All four strains were converted to a serum-resistant phenotype, including two that contained truncated lipooligosaccharide (LOS). Therefore, serum **resistance** in H. **ducreyi** does not require expression of full-length LOS but does require expression of **dsrA**. The **dsrA** locus from eight addnl. H. ducreyi strains was sequenced, and the deduced amino acid sequences were more than 85% identical. The major difference between the **DsrA** proteins was due to the presence of one, two, or three copies of the heptameric amino acid repeat NTHNINK. These repeats account for the variability in apparent mol. mass of the monomeric form of **DsrA** (28 to 35 kDa) observed in sodium dodecyl sulfate-polyacrylamide gel electrophoresis. Since **DsrA** is present in virulent strains, is highly conserved, and is required for serum resistance, we speculate that it may be a virulence factor and a potential vaccine candidate.

REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 8 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2000:349913 BIOSIS
DOCUMENT NUMBER: PREV200000349913
TITLE: Expression of **dsrA** is required for efficient attachment of Haemophilus ducreyi to keratinocytes.
AUTHOR(S): Cole, L. E. [Reprint author]; **Elkins**, C. [Reprint author]; Kawula, T. H. [Reprint author]
CORPORATE SOURCE: University of North Carolina, Chapel Hill, NC, USA
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2000) Vol. 100, pp. 69. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology. Los Angeles, California, USA. May 21-25, 2000. American Society for Microbiology.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Aug 2000
Last Updated on STN: 7 Jan 2002

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L26 22 S "ELKINS C"?/AU AND DSR#(S)DUCREYI
L27 0 S L26 NOT L24

Searcher : Shears 571-272-2528

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FILE 'HOME' ENTERED AT 09:03:59 ON 13 MAY 2004

Searcher : Shears 571-272-2528